

Claims

1. Method for removing at least one constituent from a solution, comprising:
 - forming a liquid mixture by bringing together said solution and a particulate seed material under conditions or in the presence of one or more substances
 - 5 which cause the constituent to be removed to crystallize out on the surface of the seed material ; and
 - separating the seed material having the constituent to be removed crystallized out thereon from the liquid mixture by passing the liquid mixture through a filter, wherein the pore size of the filter is greater than or equal to
 - 10 the particle size of the seed material.
2. Method according to claim 1, wherein the particle size of the seed material is from 0.1 to 50 μm .
3. Method according to claim 1 or 2, wherein the pore size of the filter is equal to or less than 150 μm .
- 15 4. Method according to any one of claims 1-3, wherein the particle size of the seed material is from 5 to 25 μm .
5. Method according to any one of claims 1-4, wherein the pore size of the filter is from 5 to 100 μm .
6. Method according to any one of claims 1-5, wherein one or more
- 20 substances cause the constituent to be removed to crystallize out on the surface of the seed material.
7. Method according to any one of claims 1-6, wherein the seed material comprises an inorganic material selected from the group consisting of a mineral clay types, silica particles, silicates or diatomes.
- 25 8. Method according to any of claims 1-6, wherein the seed material comprises an organic material selected from the group consisting of cellulose, stearate and lactose.

9. Method according to any one of claims 1-8, which method is used to prepare particles with a distinct morphology, size distribution and polymorphology.
10. Method according to any one of claims 1-9, wherein the solution is
5 water or an aqueous solution.
11. Method according to claim 10, which method is used to soften water and wherein the pH of the solution is being increased to cause CaCO_3 to precipitate on the seed material.
12. Method according to any one of claims 1-10, which method is used to
10 remove heavy metal ions from the solution by way of crystallizing out metal salt or metal hydroxide on the surface of the seed material.
13. Method according to any one of claims 1-10, which method is used to remove anions from the solution by way of crystallizing out a salt of the anions on the surface of the seed material.
14. Method for preparing a particulate material, wherein use is made a
15 method according to any one of claims 1-13, and wherein the particulate material comprises the particulate seed material and the constituent that has crystallized out on the surface of the seed material.
15. Particulate material obtainable by the method according to claim 14.
16. Apparatus for removing at least one constituent from a solution
20 comprising a vessel, one or more filters that are located inside the vessel, at least one inlet for introducing a liquid mixture which comprises the solution from which the constituent needs to be removed, a particulate seed material on the surface of which the constituent to be removed will crystallize out and
25 optionally one or more substances that cause the constituent to be removed to crystallize out on the surface of the seed material, at least one outlet for discharging the solution from which the constituent is removed which outlet(s) is (are) connected to the one or more filters, and an outlet for withdrawing seed material having the constituent to be removed crystallized out thereon.